

## REMARKS

This request for continued examination is being submitted out of an overabundance of caution to have the allowed claims considered in light of additional prior art. Such art is cited in an accompanying Supplemental Information Disclosure Statement. Reconsideration of the rejected claims in view of the remarks to follow is requested.

Claims 42-79 remain in the application.

Applicant acknowledges the allowance of claims 58-79.

Claims 58-62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claims 42-45, 49-51, 53, 55 and 56 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chan et al. (5,998,860, in view of Chen et al. (6,215,180). Claims 52 and 54 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chan et al., in view of Chen et al., and further in view of Wang et al. (6,226,140). Claim 57 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nakashima et al. (5,661,086) in view of Chen et al., and Wang et al. Claims 46 and 47 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chan et al., in view of Chen et al., and further in view of Tummala et al. (Microelectronics Packaging Handbook; Semiconductor Packaging - Part II, 2<sup>nd</sup> Edition, pages 898-901). Claim 48 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Chan et al., in view of Chen et al., and further in view of Tummala et al. (Microelectronics Packaging Handbook; Semiconductor Packaging - Part III, 2<sup>nd</sup> Edition, pages 223-234).

Claim 42 is rejected as being obvious over the combination of Chan and Chen. Claim 42 recites forming a thermally conductive material over at least a portion of a die, the material comprising a thermal conductivity greater than that of elemental copper. Of the combination of references, the Examiner relies on Chen to allegedly teach this recited limitation referring to col. 4, which teaches a heat dissipating member such as aluminum, copper, iron, and nickel (col. 4, lines 39-43) (page 4 of paper no. 0803). Respectfully, each element listed by Chen has a thermal conductivity of less than copper, not greater than as recited in claim 42. Therefore, it is inconceivable that the combination of art teaches the recited limitation of claim 42. Applicant presents a courtesy copy of a listing of thermal conductivities of metals located from a quick search on the Internet. Such list demonstrates that aluminum equals 3.00 (all listed as watts centimeter °Celsius), copper equals 4.83, iron equals 1.32, and nickel equals 1.58. Accordingly, the list of metals for a heat dissipating member as taught by Chen could not possibly teach or suggest a material comprising a **thermal conductivity greater than that of elemental copper** as positively recited in claim 42.

Moreover, the Examiner discusses this rejection in the context of Applicant's specification which is improper pursuant to Federal Circuit Law. The Examiner is respectfully reminded that the motivation for combining references must be something other than hindsight reconstruction based on using Applicant's invention as a road map for such a combination. *See, e.g., Interconnect Planning Corp. v. Feil*, 227 USPQ 543, 551 (Fed. Cir. 1985); (explaining that hindsight reconstruction is an improper basis for rejection of a claim). A long held and

basic tenet of Patent law is stated generally as, the Examiner can not rely on the Applicant's disclosure for teachings to provide a rejection, and such is sometimes referred to as impermissible hindsight reconstruction. The Federal Circuit stated it most succinctly, "[t]o imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against the teacher." *W. L. Gore & Associates, Inc. v Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Pursuant to this Federal Circuit authority, any reliance on Applicant's teachings is impermissible hindsight reconstruction, and therefore, improper. Accordingly, the Examiner can not rely on Applicant's specification for teachings, and since the art of record fails to teach or suggest a positively recited limitation of claim 42, claim 42 is allowable.

Claims 43-44 depend from independent claim 42, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

Claim 45 stands rejected as being obvious over Chan and Chen. Claim 45 recites a metal foil comprising a thickness of less than or equal to about 500 microns. The Examiner relies on M.P.E.P. §2144.05(b) (based on the ruling of *In re Aller, Lacey, and Hall*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955)) stating that it would be of ordinary skill in the art to perform routine experiments to find the optimal metal foil thicknesses to perform its function. Respectfully, the

Examiner is mischaracterizing the M.P.E.P. section. The court for *In re Aller* stated that, “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation” referring only to ranges in concentration and temperature. 220 F.2d, at pg. 456, 105 USPQ at pg. 235. The M.P.E.P. §2144.05(b) makes this clear.

If “routine experimentation” still exists, it is a very narrow doctrine dealing with the obviousness of experimentation to determine optimal or workable ranges of only two physical characteristics of materials: temperature and concentration. *In re Aller, Lacey, and Hall*, 220 F.2d 454; see also *In re Swain and Adams*, 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412, 415. Additionally, the doctrine has always been in disfavor. The *In re Yates* court stated, “The problem, however, with such ‘rules of patentability’ (and the ever-lengthening list of exceptions which they engender) is that they tend to becloud the ultimate legal issue—obviousness—and exalt the formal exercise of squeezing new factual situations into preestablished pigeonholes. Additionally, **the emphasis upon routine experimentation is contrary to the last sentence of section 103**”. *In re Yates*, 663 F.2d 1054, 211 USPQ 1149, 1151 n.4 (CCPA 1981) (emphasis added). Accordingly, since claim 45 does not recite to any limitation dealing with temperature or concentration, the rejection against claim 45 based on M.P.E.P. §2144.05(b) is inappropriate and should be withdrawn. For at least this reason, claim 45 is allowable.

Claims 46-56 depend from independent claim 45, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

Claim 57 stands rejected as being obvious over the combination of Nakashima, Chen and Wang. Respectfully, the Examiner has not presented any motivational rationale for modifying the combination of Nakashima and Chen with the teachings of Wang as is required for a proper obviousness rejection (page 6 of paper no. 0803). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP §2143.01 (8<sup>th</sup> edition) *citing In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so". 916 F.2d at 682, 16 USPQ2d at 1432; MPEP §2143.01; See also *In re Finch*, 972 F.2d, 1260, 23 USPQ2d, 1780 (Fed. Cir. 1992).

The Examiner has not provided any motivational rationale for the combination of art, and therefore, the rejection against claim 57 is devoid of any desirability for the modification as required of a proper obviousness rejection. The reasoning presented by the Examiner is simply stating that Nakashima and Chen can be modified by Wang to allegedly conform to limitations of independent claim 57, and therefore, the modification is obvious to do so. Pursuant to the

above Federal Circuit authority, this is inappropriate, and therefore, the obviousness rejection fails and should be withdrawn. Claim 57 is allowable.

Claims 58-62 depend from independent claim 57, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

This application is now believed to be in immediate condition for allowance, and action to that end is respectfully requested. If the Examiner's next anticipated action is to be anything other than a Notice of Allowance, the undersigned respectfully requests a telephone interview prior to issuance of any such subsequent action.

Respectfully submitted,

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